US Department of Housing and Urban Development
Real Estate Assessment Center (PHI-REAC)

SDM Define Phase Deliverable
Functional Requirements Document

for the

Financial Assessment Subsystem – Public Housing (FASS PH)

System:	REACS
Subsystem:	FASS-PH
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FUNCTIONAL REQUIREMENTS DOCUMENT

Financial Assessment Subsystem – Public Housing (FASS-PH)
Release 8.1.0.0

U.S. Department of Housing and Urban Development

August 26, 2005

Revision Sheet

Release No.	Date	Revision Description
Rev. 1.1	06/07/2005	Initial Revision
Rev. 1.2	06/13/2005	Incorporate Requirement Review Comments
Rev. 1.3	06/21/2005	Adding One New Requirement
Rev. 1.4	06/23/2005	Incorporate Management Review Comments
Rev. 1.5	06/03/2005	Incorporate IT Managers Comments

Data Requirements Document Authorization Memorandum

I have carefully assessed the Data Requirements Document for the (System Name). This document has been completed in accordance with the requirements of the HUD System Development Methodology.

MANAGEMENT CERTIFICATION - Please check the appropriate statement.

_____ The document is accepted.

_____ The document is accepted pending the changes noted.

_____ The document is not accepted.

We fully accept the changes as needed improvements and authorize initiation of work to proceed. Based on our authority and judgment, the continued operation of this system is authorized.

_____ _____

Freddie Harrison DATE
FASS-PH IT Manager

_____ _____

Nicholas Miele DATE
FASS-PH Business Program Manager

FUNCTIONAL REQUIREMENTS DOCUMENT

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1.0 GENERAL INFORMATION

1.0 GENERAL INFORMATION

1.1 Purpose

The Function Requirements Document, (FRD) documents all information regarding requirements for Release 8.1.0.0 gathered by the internal users and the FASS-PH development team in accordance with HUD SDM document standards (Handbook 2400.15). This document will detail as possible the definition of procedures, impacts on the user and other subsystems, inputs, and outputs.

1.2 Scope

The scope of the Release 8.1.0.0 is determined by requirements documented in the Release 8.1.0.0 Statement of Work. These requirements are displayed in a table format. The column header, "#", indicates the sequential order of the requirements. The column header, "Req. #", indicates the requirement number noted in Release 8.1.0.0 Statement of Work Document. The column header, "Title" and "Description", are self-explanatory.

Requirement Table			
#	Req. #	Title	Description
1	2	Line Item G3000-010	First, the DCF/Financial Statement/G3000-010 Type of Audit Report/G3000-060 & 070 will now reflect Fund Type and Opinion of the Fund rather than Program. Auditors should only be entering opinion for funds within the PHA.
2	3	View Prior Fiscal Year Submission Comments	Allow analysts to review prior year submission comments while still reviewing the current FYE submission. This interface will allow the analyst to review prior submission comments without navigating between multiple submissions.
3	4	Line Item G4200-010 & G4200-050	Modify Line Item 4200-050 to default to "N/A"; if and only if Line Item 4200-010 is selected "No" for Non-Major Programs audited A133, there will be no penalty when this opinion is selected.
4	5	Line Item G1102	New logic will be in place, so that the external user will not be able to enter any amount on Line Item G1102. This new methodology should begin for all 9/30/2005 submissions.
5	6.2	FASS Analyst Column	Modify the FASS Analyst column for the external user inbox only to display the name of the Business Manager or Analyst.
6	6.7	FDS Report	Repair the FDS report page to print correctly from MS Internet Explorer.
7	7.1	Storing Assessment Attachments	Change the storage of permanent file attachments from being part of the UNIX /Windows file system to being stored as Binary Large Objects (BLOB's) in the database. All file attachments need to be stored and retrieved on the REACS database.
8	7.2	HTTPS on port 443 (default)	Remove any instances of http port in ColdFusion templates and replace http port with the relative server.
9	7.7	WASS – Guest Checkbox	WASS will remove the guest checkbox on the Login interface. Have the system automatically recognized a guest user.
10	7.9	Remove Identity Type from the Participant Assessment Table.	Remove identity attribute from the column definition in the assessment table and replace the attribute with a stored procedure to find the sequential primary key value.
11	7.10	LOCCS/HUDCAPS Storing Data.	Remove storing Line of Credit Control System/ HUD Central Accounting Processing System (LOCCS/HUDCAPS) data in permanent tables and pipe the HOCCS/HUDCAPS data directly into the REAC database.

1.3 Project References

The following documents are available to provide a comprehensive understanding of the PHA financial assessment process. Most documents are available via the PIH-REAC Document Library. Additionally, several of the documents listed below are available through the PHA Financial Assessment Internet site at ***http://www.hud.gov/offices/reac/products/prodpha.cfm.***

References Table

Document Name	Date
FASS-PH 8.1.0.0	
FASS-PH Release 8.1.0.0 SDM Needs Statement Document	05/23/2005
FASS-PH Release 8.1.0.0 SDM Initiate Phase – Feasibility Study	06/10/2005
FASS-PH Release 8.1.0.0 SDM Initiate Phase – Cost/Benefit Analysis	06/10/2005
FASS-PH Release 8.1.0.0 SDM Initiate Phase – Risk Analysis	06/09/2005
FASS-PH Release 8.1.0.0 SDM Initiate Phase – Risk Management Plan	05/31/2005
FASS-PH Release 8.1.0.0 SDM Initiate Phase – Project Management Plan	05/31/2005
FASS-PH Release 8.1.0.0 SDM Initiate Phase – Quality Assurance Plan	05/31/2005
FASS-PH Release 8.1.0.0 Statement of Work	05/23/2005
FASS-PH Release 8.1.0.0 Assessment Package	05/23/2005
FASS-PH 8.0.0.0	
FASS-PH Release 8.0.0.0 SDM Functional Requirements Document	11/13/2003
Policies	
PHAS: Physical Condition Scoring Process and Financial Condition Scoring Process	10/21/2003
Changes to the Public Housing Assessment System (PHAS); Proposed Rule, 24 CFR Part 902	02/06/2003
PHAS; Notice Adopting Interim Scoring Methodologies for PHAS Physical Condition and Financial Conditions Indicators	03/15/2002
PHAS Information About PHAS Interim Scoring Methodology for PHAs With Fiscal Years Ending On or After September 30, 2001: Introduction; Notice	11/26/2001
PHAS; Financial Condition Scoring Process Notice	12/21/2000
PHAS Financial Condition Scoring Process	06/28/2000
Uniform Financial Reporting Standards: 24 CFR Part 5, et al	03/27/2000
Technical Correction to PHAS Final Rule	06/06/2000
Public Housing Assessment System (PHAS) Amendments; Final Rule," 24 CFR Part 902	01/11/2000
PHAS Proposed Amendments to 24 CFR Part 902	06/22/1999
Public Housing Assessment System; Financial Condition Scoring Process Notice	06/23/1999
Uniform Financial Reporting Standards for HUD Housing Programs; Final Rule," 24 CFR Part 5, et al	09/1/1998
Public Housing Assessment System Final Rule," 24 CFR Parts 901 and 902	09/1/1998
Additional References	
OMB: "Information Collection; Request for Public Comments	08/15/2003
Federal Audit Clearinghouse (FAC) Summary of Proposed Changes to the Data Collection Form (SF-SAC)	08/15/2003
Draft Data Collection Form (SF-SAC) for Fiscal Year Ending Dates in 2004, 2005, or 2006	08/15/2003
Instructions for Completing Form SF-SAC, … for Fiscal Periods Ending in 2004, 2005, or 2006	08/15/2003
Summary of Changes to SF-SAC	11/16/2000
Financial Data Schedule Line Definitions and Crosswalk Guide	09/14/2001
HUD PHA GAAP Conversion Guide," 01/31/2000.	N/A
Detailed System Requirements Document for the AFS Version 2.0."	N/A
Annual Financial Data Submission Requirements for the AFS Version 2.0."	N/A

References Table	
Addendum to the Data Standardization Results for the AFS Version 2.0."	N/A
System Development Methodology Release 6.01," January 2000.	N/A
Preliminary Scoring Methodology and Thresholds for Financial Indicators	06/30/1999
Financial Indicators Methodology & Analysis Guide	12/14/1999
PHA Financial Assessment Lab Financial Assessment Operations Design and Procedures	03/31/1999
Financial Assessment Lab – Business Process Documentation and Flow Maps	09/21/1999
PHAS Appeals Business Process	11/28/2000
HUD Business Resumption Plan	10/2000

1.4 Acronyms and Abbreviations

Term	Definition
APP	Annual Performance Plan
CCD	Change Control Board
CFDA	Catalog of Federal Domestic Assistance
DCF	Data Collection Form
DCG	Development Coordination Group
EIN	Employer Identification Number
FASS	Financial Assessment Subsystem
FASS-PH	Financial Assessment Subsystem – Public Housing
FDS	Financial Data Schedule
FRD	Functional Requirements Document
FY	Fiscal Year
FYE	Fiscal Year End
GAAP	Generally Accepted Accounting Principles
GAGAS	Generally Accepted Government Auditing Standards
GASB	Governmental Accounting Standards Board
GPEA	Government Paperwork Elimination Act
HA(s)	Housing Authority
HTML	Hypertext Markup Language
HUD	Department of Housing and Urban Development
HUD OIG	HUD Office of Inspector General
HUDCAPS	HUD Central Accounting Processing System
HUDWeb	HUD's Intranet Web Site
IG	Inspector General
IPA	Independent Public Accountant
IT	Information Technology
JAD	Joint Application Development
LOCCS	Line of Credit Control System
LPF	Late Presumptive Failure
NASS	Integrated Assessment Subsystem
OMB	Office of Management and Budget

PASS	Physical Assessment Subsystem
PD&R	Policy Development and Research
PH	Public Housing
PHA(s)	Public Housing Agency/Public Housing Authority
PHAS	Public Housing Assessment System
PIH	Public Indian Housing
PIH-REAC	Public Indian Housing - Real Estate Assessment Center
POC	Points of Contact
QA	Quality Assurance
QASS	Quality Assurance Subsystem
RASS	Resident Satisfaction Assessment Subsystem
REAC	Real Estate Assessment Center
REACS	Real Estate Assessment Center System
SAC	PHAS invalidation action code
SQL	Standard Query Language
TAC	Technical Assistance Center (formerly the Customer Service Center)
TBD	To Be Defined
UFI	Unique Fee Accountant Identifier
UFRS	Unified Financial Recording Standards
UII	Unique IPA Identifier
WASS	Web Access Security System
WDDX	Web Dynamic Exchange
XML	eXtensible Mark-up Language

1.5 Points of Contact

1.5.1 Information

The following table lists Points of Organizational Contact (POC's).

Points of Organizational Contacts Table				
Contact Name	**Organization**	**Position**	**Telephone Number**	**Email**
Nick Miele	PIH-REAC	FASS-PH Business Program Manager	202-475-8788	Nicholas_X._Miele@hud.gov
Steve Bolden	PIH-REAC	FASS-PH Assessment Manager for Systems Operations	202-475-8706	Steve_A._Bolden@hud.gov
Freddie Harrison	PIH-REAC	FASS-PH IT Manager	202-475-8639	Frieddie_Harrison@hud.gov
Keith Bennett	Avineon Inc.	Project Manager	202-475-8903	Keith_Bennett@HUD.gov
Joneff Chung	Avineon Inc.	FASS-PH Requirements Lead	202-475-8889	Joneff_Chung@HUD.gov

Points of Organizational Contacts Table				
Contact Name	**Organization**	**Position**	**Telephone Number**	**Email**
Surafiel Berek	Avineon Inc.	FASS-PH Development Lead	202-475-8828	Surafiel_Berek@HUD.gov
Mohammed Hasan (Ashraf)	Avineon Inc.	FASS-PH Maintenance Lead	202-475-8898	Mohammed_A._Hasan@HUD.gov

1.5.2 Coordination

FASS-PH will coordinate with the following organizations to successfully implement the FASS-PH functionality:

Coordination Table	
Organization	**Support Function**
PIH-REAC	Business Requirements Support, Project Management
Avineon	Requirements, Design, Development, Testing, Installation, Deployment, Maintenance, Technical Support /Operations, Project Management
DCG	Customer Support/Operations, Development Coordination, Integration Test Coordination, Deployment, and Maintenance
HUD IT	Implementation Coordination
FASS-PH Lab	Business Requirements Support
WASS	Web-based Systems Security
NASS	PHAS Integrated Scoring
QASS	IPA referral information

Listed below are the coordination dates that each Real Estate Assessment Center System (REACS) must achieve in order to adhere to the August 26, 2005 release date.

Code Locked Date	Integration Test Start Date	Integration Test End Date	Final HARTS Request Submission Date	Release Date
08/01/2005	07/13/2005	08/08/2005	08/12/2005	08/26/2005

2.0 CURRENT SYSTEM SUMMARY

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2.1 Background

HUD has embarked on one of the most far-reaching and ambitious reform initiatives in its history. The HUD 2020 Management Reform Plan, announced in June 1997, included the establishment of the Real Estate Assessment Center (REAC). PIH-REAC is an information-intensive operation responsible for assessing the performance of entities managing or owning housing in which the Department has a financial interest or a statutory obligation to monitor. Most of these properties are public housing or multifamily properties.

The Financial Assessment Subsystem - Public Housing (FASS-PH) is a subsystem of the Real Estate Assessment Center System (REACS). FASS-PH establishes centralized financial analysis that is used to focus HUD's limited resources to improve service delivery and manage its housing programs proactively.

The Department of Housing and Urban Development (HUD) has established the HUD Annual Performance Plan (APP) to demonstrate how HUD is measuring progress toward achieving its critical mission: to promote adequate and affordable housing, economic opportunity, and a suitable living environment free from discrimination. Financial Assessment Subsystem – Public Housing (FASS-PH) aids HUD in meeting the following departmental goals and objectives: restoring the public trust, increasing affordable housing and reducing homelessness.

FASS-PH also aids HUD in addressing existing material weaknesses and business operating goals. Specifically, the FASS-PH functions address the following HUD material weaknesses identified by IG audit: Payment of Incorrect Subsidy Amount and HUD Resource Management.

The Financial Assessment Subsystem – Public Housing is supported by the following legislation and HUD reform initiatives:

1. Section 6(j) of the U.S. Housing Act of 1937;
2. HUD 2020 Management Reform Plan - missions 1 and 2: reforms 1, 3, 5, and 6;
3. Public Housing Assessment System; Final Rule (24 CFR Parts 901 and 902);
4. OMB Circular A-123 - internal control systems;
5. Government Paperwork Elimination Act (GPEA) of 1998;
6. HUD eGov Strategic Initiative.

The FY 2004 FASS-PH proposed functionality would also address the Departmental Financial Management Systems material nonconformance identified in the 1997 HUD OIG Financial Statement Audit. REAC's implementation of FASS-PH to provide financial analysis of PHAs was specifically noted in the 1998 Financial Management Accountability as a "major, comprehensive accomplishment in financial systems integration."

FASS-PH also directly helps HUD address the 1998 reportable condition for continuing "efforts to improve the monitoring of HAs."

2.2 System Objectives and Current Functionality

FASS-PH helps to enable centralized financial analysis, which is used to identify where HUD should focus its limited resources in order to improve service delivery and manage its housing programs proactively. The implementation of FASS-PH Release 8.1.0.0 will enhance the current FASS-PH application. The primary features of FASS-PH Release 8.1.0.0 are identified in Section 1.2 (Scope) of this document.

The current FASS-PH system provides a common means of collecting the financial assessments of PHAs and comparing their performance to one another and to pre-determined performance criteria. This capability allows HUD to establish a baseline of measurement for PHAs and to monitor their performance. If a poor performing PHA is detected, steps are taken to correct the problem.

Currently, the FASS-PH system uses a web-based application platform. This platform allows users to store data in a secured central database and to access pertinent information. In the case of the FASS-PH subsystem, the user can

enter financial data into the system for submission to PIH-REAC. Once this data is submitted to PIH-REAC, Analysts, Assessment Managers, and the Financial Director are able to approve, conditionally approve, or reject submissions.

The FASS-PH subsystem interfaces with other PIH-REAC subsystems. The NASS subsystem allows for the creation, review and approval or rejection of extension requests and manual submission requests. Additionally, NASS generates a PHAS score for each completed PHA submission and allows users to view the scoring details from the FASS-PH score. NASS also allows authorized users to invalidate an approved submission to allow a PHA to resubmit its financial information, provides necessary data to generate the High Reserve and Liquidity Adjustment Report, handles correspondence to external users, processes late presumptive failures, and makes necessary score adjustments. Additionally, NASS has implement the capability to waive a PHA from receiving an audit if it filed an unaudited/A-133 or unaudited/non-A-133 submission and will not be receiving an audit.

FASS-PH also interfaces with the QASS subsystem, which allows PIH-REAC personnel to submit FASS-QA referrals. The QASS subsystem maintains Unique IPA Identifiers (UII), which are assigned to PHA auditors. PHAs, auditors, and internal PIH-REAC personnel are required to enter valid UIIs on the FASS-PH DCF and FASS-QA referral pages to complete audited submissions, conduct IPA reviews, and create FASS-QA referrals for IPAs.

Finally, FASS-PH interfaces with WASS for all application security.

2.3 Current Methods and Procedures

FASS-PH has been operational for more than six years. All PHAs are required to submit an unaudited submission to HUD via FASS-PH. This submission is then scored automatically and assigned a risk level during the nightly batch process. Once the submission is scored, it is reviewed by REAC personnel for conformance to expected performance levels and is dealt with accordingly. If the PHA is required to file an audit, they must complete an audited submission as well. Prior to submission, an IPA must review the audited submission and attest that the electronic FASS-PH data matches the hard-copy audit report. When the audited submission is submitted to REAC, it will be scored and a risk level will be assigned during the nightly batch process and will go through an internal review by REAC personnel.

2.3.1 Equipment Being Used

Internet Server

The system uses the HUD and PIH-REAC Enterprise Architectures to provide data capture and reporting over the Internet using a Web farm. The specifications for the Web farm are provided below. This will be further detailed in the FASS-PH 8.1.0.0 Design Phase Documents.

SW/HW	Hudapps5	Hudapps6	Hudapps 8	Hudapps9	Hudapps 10	Hudapps 11	Hudapps 12	Hudapps 13
OS	Solaris 8							
Application server	Macromedia's ColdFusion 5.0							
Web Server	IPlanet Web server 6.0.2							
Cluster S/W	Interwoven's TeamSite 5.5.2 & OpenDeploy 5.5.1							
LDAP	Netscape Directory Server 4.1.6SP1	Netscape Directory Server 4.1.6SP1	Netscape Directory Server 4.1.6SP1	Netscape Directory Server 4.1.6SP1	None	None	None	None
Machine Type	Sun Enterprise	Sun Enterprise	Sun Enterprise	Sun Enterprise	Sun Enterprise	Sun Enterprise	Sun Enterprise	Sun Enterprise

	3500	3500	450	3500	420R	420R	420R	420R
CPU	4X336 MHz	4X336 MHz	4X400 MHz	2X336 MHz	4X450 MHz	4X450 MHz	4X450 MHz	4X450 MHz
RAM	1GBRAM	1GBRAM	1GBRAM	1GBRAM	4GB RAM	4GB RAM	4GB RAM	4GB RAM
HDD	8X9GB	8X9GB	36GB	2X9GB 1X18GB	2X38GB local, SAN	2X38GB local, SAN	2X38GB local, SAN	2X38GB local, SAN

Database Server (P08)

REAC operates on two DELL 6300 Poweredge database servers with 800mhz Pentium Pro processors. Both servers have 8GB of RAM and 400GB of hard disk storage.

Personal Computer

To access the FASS-PH Release 8.1.0.0 system, users will operate a personal computer capable of accessing the Internet and running a HUD-compliant web browser application. HUD-compliant browsers include Internet Explorer version 6.0 SP2 and Netscape Navigator version 4.79. Additionally, HUD requires a browser with 128-bit encryption to access its Online Systems.

FASS-PH users are required to have Adobe Acrobat Reader version 4.05 or higher to view the Data Collection Form Report.

Additional Software

The development team will continue to utilize the following software to complete the development process.

Additional Software Table	
Software	**Description**
Sybase	A widely used database management tool.
HTML	A widely used and accepted scripting language.
JavaScript	A widely used and accepted scripting language.
Cold Fusion Studio 5.0	A widely used application development tool.
ErWin	This tool allows the development team to develop the logical and physical models for the project.
PVCS Version Manager	This tool is used for configuration management.
PVCS Tracker	This tool is used for reporting and tracking system change requests.
SQL Advantage	This tool serves as an interface to the Sybase database.
SQL Programmer	This tool serves as an interface to the Sybase database.
Netscape 4.79, Internet Explorer 6.0 SP2	Browsers that serve as the default web browsers for the FASS-PH application.
Adobe Acrobat Reader Version 5.05, 6.0	This tool is used to create the Data Collection Form Report.
XML Tools	These tools are used for developing and managing XML assets.
Dream Weaver	This tool is used for developing and managing web sites.

2.3.2 Input and Output

Discuss input and output, including volume and frequency.

System Inputs

- Financial Data Schedule information
- Data Collection Form information

- Extension Request information
- Manual Submission Request information
- Notes and Findings information
- Reviewer information
- Unaudited submissions via XML interface

System Outputs

- Financial reports
- REAC Management Reports
- Referrals to the QASS subsystem
- FASS-PH Submission Scores
- FASS-PH Submission Risk Level Assessment

2.3.3 Provisions in the Existing System Design

PIH-REAC currently operates in an active-active web cluster environment that can support the instantaneous replication of data between two database servers. In the event of a disaster or accident that compromises the integrity of Production data on one database server, the remaining database server will support all processing. In addition, copies of the production databases are created at 10:30 PM EST each business day and are stored separately on both a tape and in a data warehouse. If, for some reason, both production database servers fail, the tape copy will be used to restore production data. This multiple backup process minimizes the risk of losing FASS-PH data. For further reference, the HUD Business Resumption Plan addresses contingency plans in the event of system failure.

2.3.4 Deficiencies

FASS-PH is available 24 hours/day, 7 days/week, excluding time for planned upgrades and maintenance. Access is limited in the evenings beginning at 10:30 PM EST when the PIH-REAC batch procedures are executed on the database server.

3.0 PROPOSED METHODS AND PROCEDURES

3.0 PROPOSED METHODS AND PROCEDURES

Release 8.1.0.0 will enhance and expand the current FASS-PH's capabilities by upgrading current or initiating new functionalities. This section will summarize the improvements and impacts to the current system, as well as assumption and constraints of the proposed methods and procedures.

3.1 Summary of Improvements

3.1.1 Functional Improvements

Access Systems

Requirement 7.2 HTTPS on Port 443

Requirement 7.2 will remove hard coded port number from all ColdFusion templates and will replace the port number with the relative server name.

Requirement 7.7 WASS Guest Checkbox

Requirement 7.7 is an infrastructure modification. WASS has communicated to the FASS-PH development team that the Guest checkbox will be removed form the FASS-PH login interface. The FASS-PH development team will have to modify how this subsystem will identify a guest user. The system will search to find any Role ID's is associated with the User ID. If any Role ID's is associated with the User ID, the user will be redirected to the Main Internal page. If no Role ID is associated with the User ID, the user will be redirected to the Main Guest Page.

Input Data

Requirement 7.1 Storing PHAs' Assessment Attachments

Requirement 7.1 is an infrastructure modification. All attachments will now be stored in the REAC database as a Binary Large Object, (BLOB) data type. Prior to release 8.1.0.0 DCG will move all attachments to the REAC database.

Requirement 7.9 Removing the Identity Functionality from the Assessment Table

Requirement 7.9 is an infrastructure modification. The identity attribute of the column definition in a database is used by the database application to find the next sequential primary key. The identity attribute of the column definition will be disabled for the assessment_id field in the participate_assessment table. To compensate for the lack of the identity functionality, the maximum assessment_id is identified and will be incremented by one.

Input Data Collection Form (DCF)

Requirement 2: DCF Financial Statement Line Item G3000-010

Text changes are needed to adhere to accounting principles. Accountants should only be entering opinion of funds within the PHA and not entering opinion of a program. The text changes will occur in the External DCF Federal Program interface and in the Line Item G3000-010 Detail interface.

The text will change in only one place on the External DCF Federal Program interface. In the description column on the Line Item G3000-010 row, the text will change from "Type of Audit Report" to "Fund Opinion(s)".

For the Line Item G3000-010 Detail interface, the text will change for every Federal Program name. For each Federal Program name that occurs on this interface, the wording "Fund Type and Opinion of the Fund containing" will be placed in front of the Federal Program name.

Requirement 4: DCF Financial Statement Line Item G4200-050

Requirement 4 will introduce a new logic between to Line Item: G4200-050 and G4200-010. If the external user selects a "No" value for Line Item G4200-010, Line Item G4200-050 will default to "Not Applicable" value and a pop-up window will inform the user of the logic between these two Line Items.

Requirement 5: DCF Financial Statement Line Item G1102

New logic will be in place, so that the external user will not be able to enter any amount on Line Item G1102. This new methodology should begin for all 9/30/2005 submissions.

Display Financial Information for HUD User

Requirement 3 Viewing Prior Fiscal Years' Submission Comments Interface

The "View Prior Fiscal Years Comment" interface is a new functionality to the FASS-PH. This interface will allow only the internal user, which consists of the Financial Analyst, Assessment Managers, and the Director to view prior fiscal years' comments.

This interface will be linked to the Internal Comment interface for each submissions. Once the internal user uses the link, the browsers will redirect the internal user to the "View Prior Fiscal Years Comment" interface. This interface will be divided into two sections: an interactive section and an output section

The interactive section of this interface will provide the user with the ability to view different outputs by changing the search criteria. The search criteria are Fiscal Year and Submission Type. The Fiscal Year search criterion will have the date range of all submissions' fiscal years currently in the FASS-PH. The Submission Type search criterion will consists of only two options of Audited and Unaudited. By default, the search criteria values will be the current fiscal year of the selected submission and both Audited and Unaudited submissions. Also the user will have the ability to redirect the browser to the original Reviewer Comment interface by pressing a link.

The output section of this interface will allow the user to view all of the comments and their attributes for the initial search criteria default values or the user's selection of the search criteria. The output will consists of the comment(s), the comment's entry date(s), and type of recommendation(s).

Display Financial Information for an External User

Requirement 6.2 FASS-PH Analyst Column

Requirement 6.2 is a maintenance requirement and will introduce a new logic regarding how to display the FASS-PH employee in the FASS-PH Analyst column. Only the financial analyst or manager that last view the submission will be display in this column. The director's name must not appear in this column.

Generate FDS Report (Current Year – Prior Year)

Requirement 6.4 Financial Data Sheet (FDS) Report

Requirement 6.4 is a maintenance requirement. This requirement will place page breaks on the FDS report, in order for the report to print properly.

Maintain LOCCS/HUDCAPS Data

Requirement 7.10 LOCCS/HUDCAPS Data Input Procedure

Requirement 7.10 is an infrastructure modification. According to DCG requirements any application must not create any permanent tables within any HUD related databases. A new procedure will be created to insert LOCCS/HUDCAPS data into the REAC database. The sub-routine of creating temporary tables weather it be database define permanent or temp tables to house the data before inserting into the REAC database will be eliminated. The data will insert directly into the database.

3.1.2 Improvements to Existing Capabilities

Discuss improvements of degree. These are upgrades to existing capabilities.

3.1.3 Timeliness

Discuss timeliness, including improved response time.

3.1.2 Improvements to Existing Capabilities

Not all requirements improve on existing capabilities. Some of the requirements are text changes, new functionality or requirements due to DCG standards. The requirements that improve existing capabilities are listed in this section.

Requirement 4 DCF Line Item: G4200-050

This requirement improves the external user ability to enter information on the DCF correctly. Currently if the external users selected "No" for Line Item G4200-010 and does not select "Not Applicable " for Line Item G4200-050, the PHA would have been penalized. This requirement will alert the external user of their actions and how to proceed without being penalized.

Requirement 5 DCF Line Item: G1102

This requirement improves the external user ability to enter information on the DCF correctly to calculate the current ratio.

Requirement 7.1 File Attachment of FASS-PH Assessments

This requirement improves performance of the application server. By moving the files from the directories to the database, the application server will be able to run move efficiently because of less memory and resources are dictated to manage these files.

Requirement 7.9 Participant Assessment Identity Functionality

This requirement improves backend performance. Having the identity attribute to the column definition enabled on any field, the FASS-PH is locked in only communicating with Sybase database application to find the next primary key value for record insertion. Disabling the identity attribute to the column definition and placing the functionality of finding the next primary key value into a ColdFusion application, the FASS-PH will more robust in communicating with other database applications.

3.1.2 Timeliness

Refer to Section 4.1.2 (Timing) of this document for information on timeliness of FASS-PH.

3.2 Summary of Impacts

3.2.1 User Organizational Impacts

Requirement 7.7 will be the only requirement that will impact other subsystems: WASS.

3.2.2 User Operational Impacts

Requirement 2: DCF Line Item G3000-010

The interfaces that this requirement will impact are the External DCF Financial Statements and the Line Item G3000-010 Detail interfaces. This impact is text only and doesn't really have any operational impacts, but it does incorporate accounting principles for resolving any accounting issues.

Requirement 3: View Prior Fiscal Years Comment Interface

The interface that this requirement will impact is the Reviewer Comment interface. A link will be added to this interface to activate the new "View Prior Fiscal Years Comments" interface.

This requirement will change how the internal user will be able to view prior fiscal year comments. Currently the user would have to go to the Inbox interface, select another fiscal year, and click the Comment link to view other

fiscal year comments. This requirement will have the internal user use "View Prior Fiscal Years Comments" interface to view other fiscal Year comments.

Requirement 4: DCF Line Item 4200-050

This requirement will impact the External DCF Federal Program interface. A new logic will be introduce to this interface only allowing the user to only enter a " Not Applicable" value for Line Item G4200-050 if and only if Line Item G4200-010 has a value of "No". If the user doesn't comply with this new logic an alert window will pop-up.

Requirement 5 DCF Line Item 1102

This requirement will impact the External DCF Federal Program interface. A new logic will be introduce not to allow the external user to select any value for Line Item G1102 for any submission occurring after September 30, 2005. If the user doesn't comply with this new logic an alert window will pop-up.

Requirement 7.1 File Attachment for FASS-PH Assessments

This requirement doesn't impact any interface. The procedure of attaching a file to an assessment has not change. The impact is how the attachment is stored on the REAC database. Currently the attachment is stored in directories. This requirement will propose that a table will be created to store these attachments and data type will be a Binary Large Object, BLOB.

Requirement 7.7 WASS Guest Checkbox

This requirement will impact the login interface. The "Guest User" checkbox will be removed from the login interface. The system will automatically identify a user as a guest user.

3.2.3 User Developmental Impacts

The FASS-PH Release 8.1.0.0 will not presently have developmental impacts on the existing system. The user will not have required any training.

3.3 Assumptions and Constraints

The following is a list of assumptions and constraints related to FASS-PH Releases 8.1.0.0.

Assumptions:

- System Operational Life: The system will be in production for a minimum of 6 years
- System Comparison: The period of time available for comparing system alternatives will be a minimum of 3 years
- Funding: Adequate funding will be provided for planning, documenting requirements and design, developing, and testing all modifications being incorporated into FASS-PH Release 8.1.0.0
- Operating Environment: The FASS-PH web application will remain on HUDAPPS, and FASS-PH data will be stored in the REACS database on the NTHCCP08 server
- Data Storage Capacity: The HUD REACS production database will provide adequate space to store all data involved with the financial assessment process

Constraints:

- Time: FASS-PH Release 8.1.0.0 is scheduled for implementation on August 26, 2005; however, the schedule is subject to change based on any unplanned maintenance activities or contracting issues.
- Budget: Necessary functionality must be developed within the HUD budget;
- Scope Change: The scope of FASS-PH Release 8.1.0.0 may be reduced if any unplanned maintenance activities or contracting issues arise.

Mitigating Factors:

- Time– The FASS-PH team has developed a detailed work plan that sets aggressive goals and milestones throughout the design, development and testing of this release.

- Scope Change – Regular communication with the REAC staff is the best way to monitor scope management. Signoff is required on the proposed functionality for the FASS-PH Release 8.1.0.0 functional and data requirements are base lined upon final acceptance of the SDM Define Phase documents. Changes to these base lined requirements are submitted to REAC's Change Control Board.

4.0 DETAILED CHARACTERISTICS

4.0 DETAILED CHARACTERISTICS

4.1 Specific Performance Requirements

Specific performance requirements are listed in the table below. The table is divided into three sections: Accuracy and Validity, Timing, and Flexibility. The list documents each performance measure and the source of the measure.

4.1.1 Accuracy and Validity

PREQ #	PERFORMANCE MEASURE	SOURCE
1.0	**Accuracy**	
P1	FASS-PH must be maintained with automatic edits/validation of external data.	User Requirement

4.1.2 Timing

PREQ #	PERFORMANCE MEASURE	SOURCE
2.0	**Timing**	
P2	FASS-PH will score submitted PHA submissions every evening.	User Requirement
P3	FASS-PH will be available for PHA submission entry 24 hours per day, except for downtime during scheduled system maintenance and upgrades.	User Requirement
P4	FASS-PH will provide capability to generate multiple reports 24 hours per day, except during scheduled system maintenance and upgrades.	User Requirement
P5	FASS-PH will provide capability to load every page in 8 second or less (except for the waived pages).	User Requirement
P6	FASS-PH will provide capability to execute every stored procedure in 3 second or less (except for the waived stored procedures).	User Requirement

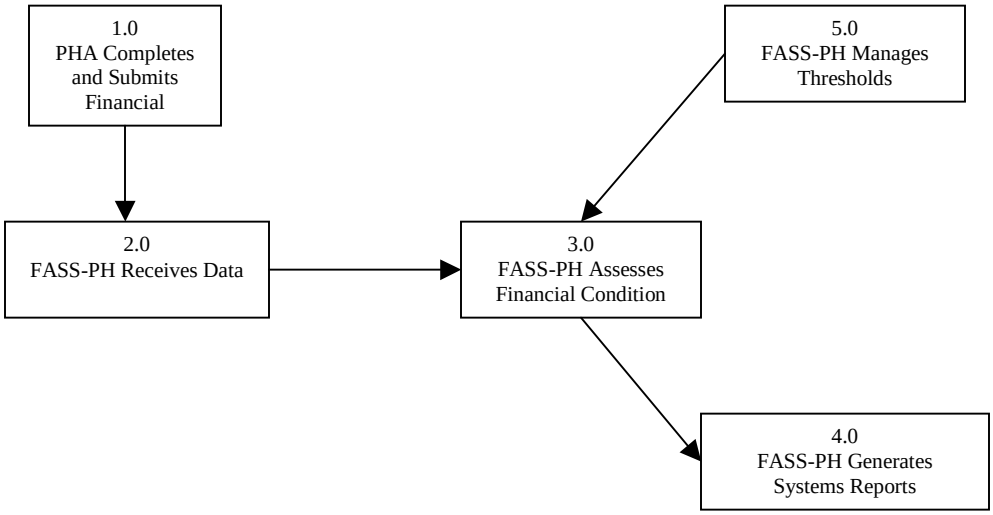
4.1.3 Capacity Limits

PREQ #	PERFORMANCE MEASURE	SOURCE
3.0	**Flexibility**	
P7	Design system to allow for any number of submissions within a 24-hour period, except for downtime during scheduled system maintenance and upgrades.	User Requirement
P8	Design system to store data properly within the target database.	User Requirement
P9	The database must be able to store a minimum of 6,000 submissions annually.	User Requirement
P10	The system will have the capability to handle at least 600 concurrent transactions (100 concurrent transactions * 6 servers).	User Requirement
P11	The system will have the capability to handle at least 600 concurrent users.	User Requirement

4.2 Functional Area System Functions

FASS- PH helps to enable centralized financial analysis, which is used to identify where HUD should focus its limited resources in order to improve service delivery and manage its housing programs proactively.

The following is the functional flowchart consists of high-level flow of all FASS-PH functions.



The functional process diagram is a high-level outline of FASS-PH functions. This table logically organizes and numbers the Business Processes, Functional Requirements, and displays what requirements will modify the functionality.

Business Process				Functional Requirement	Release 8.1.0.0 Requirements
1				Complete and Submit Financial Information	
	1.1			Access System	7.7, 7.2
	1.2			Download Submission Template	
	1.3			Download Draft Submission Data	
	1.4			Input Data	7.1, 7.9
		1.4.1		Input FDS	
		1.4.2		Input Data Collection Form	2, 4, 5
		1.4.3		Input Notes and Findings	
		1.4.4		Input Material Difference Reason	
	1.5			Validate Data Format	
	1.6			Save Draft Financial Data	
		1.6.1		Transmission Error Handling (rollback)	
		1.6.2		Post Successful Submission Status	
	1.7			Validate Data Against Business Rules	
		1.7.1		Generate Data Error Report	
		1.7.2		Correct Data Issues	
	1.8			Validate Data Against Edit Flags	
		1.8.1		Run External Program-Based Edit Flags	
		1.8.2		Run External Entity-Wide Edit Flags	
	1.9			Submit Final Submission Data	
		1.9.1		Submit for IPA Review	
			1.9.1.1	Perform IPA Review	
			1.9.1.2	Submit to PHA or Section 8 Entity for Corrections	
		1.9.2		Submit to REAC via Online System	
			1.9.2.1	Transmission Error Handling (rollback)	
			1.9.2.2	Post Successful Submission Status	
		1.9.3		Submit to REAC via XML Interface	
			1.9.3.1	Transmission Error Handling (rollback)	
			1.9.3.2	Post Successful Submission Status	
2				Receive Financial Information	
	2.1			Post Financial Information	
	2.2			Display Financial Information for HUD User	3
	2.3			Display Financial Information for an External User	6.2
	2.4			Calculate Score	
		2.4.1		Calculate Current Ratio	
		2.4.2		Calculate Number of Months Expendable Fund Balance	
		2.4.3		Calculate Tenant Receivable Outstanding	
		2.4.4		Calculate Occupancy Loss	
		2.4.5		Calculate Expense Management/Utility Consumption	

Business Process			Functional Requirement	Release 8.1.0.0 Requirements
		2.4.6	Calculate Net Income or Loss Divided by the Expendable Fund Balance	
		2.4.7	Assess Penalty Points for Audit Flags	
		2.4.8	Assess Penalty Points for Materiality	
	2.5		Assign Risk Level	
	2.6		Run Internal Edit Flags	
	2.7		Run Auto Acceptance Process	
3			Assess Financial Condition	
	3.1		Review Submission	
		3.1.1	Review IPA Comments from FASS-QA	
		3.1.2	Compare FDS Unit Count to REAC Database Unit Count	
	3.2		Adjust Score	
		3.2.1	Abate Penalty Points for Audit Flags	
		3.2.2	Abate Penalty Points for Materiality	
		3.2.3	Abate Penalty Points for Late Submission	
	3.3		Flag Submission for FASS-QA	
	3.4		Record Comments	
	3.5		Accept/Reject Submission	
		3.5.1	Provide Data for Rejection/Resubmission Notification	
		3.5.2	Provide data for conditional acceptance notification	
	3.6		Submit Review	
	3.7		Invalidate Submission	
	3.8		Transfer Accepted DCF Data to the OMB (Audited/A-133 Submissions Only)	
4			Generate System Reports	
	4.1		Generate FDS Report (Current Year – Prior Year)	6.7
	4.2		Generate FDS Report (Audited – Unaudited)	
	4.3		Generate Data Collection Form Report	
	4.4		Generate Combined Balance Sheet	
	4.5		Generate Combined Statement of Revenues and Expenses	
	4.6		Generate Schedule of Federal Financial Assistance	
	4.7		Generate Financial Statement Footnotes	
	4.8		Generate REAC Management Reports	
		4.8.1	Generate Submission Summary	
		4.8.2	Generate Pending Submission by Reviewer	
		4.8.3	Generate Pending Submission by Date	
		4.8.4	Generate Production Report	
		4.8.5	Generate Individual Output Report	
		4.8.6	Generate High Reserve and Liquidity Adjustment Report	
		4.8.7	Generate Pending Review Aging Schedule Report	
		4.8.8	Generate PHA History Report	
	4.9		Generate IPA Status Reports	
	4.1		Generate Statement of Net Assets	
	4.1		Generate Statement of Revenues, Expenses, and Changes in Fund Net Assets	
	4.1		Generate LOCCS Comparison Report and HUDCAPS	

Business Process		Functional Requirement	Release 8.1.0.0 Requirements
	4.1	Generate Edit Flags Report	
5		Manage Thresholds	
	5.1	Override Risk Level	
	5.2	Help Maintenance	
	5.3	Maintain Auto Acceptance Criteria	
	5.4	Maintain LOCCS/HUDCAPS Data	7.10
	5.5	Workload Management	
	5.6	OMB Compliance Statement	

4.3 Input and Output

Input

The FASS-PH will continue to provide the same functionality already in production. This new release of the software is designed to increase its functionality and ease user-interactivity. The following is a list of the changes that will be made to the user interface from an input standpoint:

Input Table	
Modification	**Description**
Requirement 3	
"View Prior Fiscal Years' Comment" Link	A link for internal user to use to view prior fiscal years' comments.
Fiscal Year Drop-down Menu	A search criterion for the "View Prior Fiscal Years' Comment" interface to view other fiscal years.
Admission Type Drop-down Menu	A search criterion for the "View Prior Fiscal Years' Comment" interface to view other admission types.
Go Button	Used to display an out put that the user selected on the "View Prior Fiscal Years' Comment" interface
Back Link	Used to redirect the user to the original Comment interface on the "View Prior Fiscal Years' Comment" interface
Requirement 4	
Line Item G4200-010	Manual form input for the external user to enter an amount. This Line Item in association with Line Item G4200-050 will make sure that the external user will enter the amounts correctly
Line Item G4200-050	Manual form input for the external user to enter an amount. This Line Item in association with Line Item G4200-050 will make sure that the external user will enter the amounts correctly
Requirement 7.1	
Assessment Attachment	An attachment to be stored in the FASS-PH that is associated with a submission.
Requirement 7.7	
User ID	Used to login into the FASS-PH
Password	Used to login into the FASS-PH

Output

Just as the FASS-PH inputs will be modified to provide more functionality, the FASS-PH outputs will be modified to provide more detailed and relevant information. A new report will be added, as well as functionality to make the interface user-friendlier.

Modification	Description
FASS-PH Analyst Column	A column on the external inbox interface that will only display a financial analyst or manager, never the director.
FDS Report	FDS Report

4.4 Failure Contingencies

Recommended failure contingencies are documented in the table below. REAC and HUD IT must develop an agreement to effectively communicate all issues relating to system failure. All communication should occur in a timely manner. Additionally, REAC must be prepared to notify its business partners (PHAs, Field Offices, etc.) of any major system failure. Reference the HUD Business Resumption Plan for information on REAC's manual business resumption plan in the event of a system failure.

Cont #	Point of Failure	Failure	User Impacted	Recommended Max Downtime	Recommended Contingency Plan
1.0	**Client**				
1.1	Hardware	Hardware failure	Single/ Group	1 hour	Utilize backup hardware.
1.2	Software	Program error/failure	Single/ Group	1 hour	Provide scheduled backups to software programs (production programs and programs in development).
1.3	Communications	Internet/Intranet failure	All/Single/ Group	None	Utilize additional communication equipment for back up.
1.4	Data	Data failure: corrupted files or hardware failure	Single/ Group	None	Provide regular backups to production data. A mirror backup with real-time accuracy is available.
1.5	Timing	Data update failure	Single/ Group	None	Utilize existing backup resources.
2.0	**Server**				
2.1	Hardware	Hardware failure	All	None	Utilize backup hardware (backup server, etc.).
2.2	Software	Program error/failure	All	None	Utilize backup software if necessary.
2.3	Communications	Internet/Intranet failure	All	None	Utilize backup resources or allow functions to be performed via the REAC Technical Assistance Center.
2.4	Data	Data failure	All	None	Utilize existing backup resources. Provide regular backups to production data. A mirror backup with real-time accuracy is suggested.
2.5	Timing	Data update failure	All	None	Utilize existing backup resources.

Backup: HUD performs nightly incremental and weekly full back-ups of their servers and databases. All backups are performed using a tape medium. Additionally, the COOP architecture provides a real-time backup database, in the event of database failure. Refer to the contingencies listed in the above table. Please refer to the HUD Business Resumption Plan.

Fallback: In the event that FASS-PH is unable to perform the necessary functionality, the REAC FASS-PH team may need to perform the necessary analysis manually.

Degraded Modes of Operation: FASS-PH must be restored completely in the event that full processing capability is not available.

5.0 DESIGN CONSIDERATIONS

5.0 DESIGN CONSIDERATIONS

Chapter Five will document how purpose system, in the case of Release 8.1.0.0 the modification and functionality added to the FASS-PH, stratify the requirements stated in § 1.2, Scope on page number 1-1 of this Functional Requirements Document. The chapter will also document any additional technical requirements that do not relate directly to the functions and performance that is obvious to the user.

5.1 System Description

This section will document a general description of the design of the enhancements and additional functionality. Each of the requirements stated in § 1.2, Scope on page number 1-1 of this Functional Requirements Document will be logically grouped into functionalities. These functionalities are displaying PHAs' submission information, data entry, and FASS-PH login, storing system parameters, and storing data in the REAC database.

The purpose modifications that will satisfy the displaying PHAs' submission information functionality are requirement 6.2, Displaying FASS Analyst Column; and requirement 6.4, FDS Reports.

The purpose modifications and additional capabilities that will satisfy the data entry functionality are requirement 2 – Date Collection Form (DCF) Financial Statement Line Item G3000-010; requirement 4 – DCF Financial Statement Line Item G4200-050; and requirement 5 – DCF Financial Statement G1102.

The purpose modification that will satisfy the FASS-PH login functionality is requirement 7.7 – WASS remove Guest checkbox.

The purpose modification that will satisfy the storing system parameters functionality is requirement 7.2 – remove any code that has https on port 443.

The purpose additional capability that will satisfy the viewing prior fiscal year PHAs' submission comments functionality is requirement 3, viewing prior fiscal year PHAs' submission comments interface.

The purpose modifications that will satisfy the storing data in the REAC database are requirement 7.1 – storing PHAs' assessment attachments; requirement 7.9 – removing the identity attribute to the column definition in the assessment table in the REAC database; and requirement 7.10 – processes storing LOCCS/HUDCAPS data in the REAC database.

5.2 System Functions

This section will elaborate on the solutions to fulfilling requirements listed in §1.2 – Scope.

Access Systems

Requirement 7.2 HTTPS on Port 443

Requirement 7.2 will remove hard coded port number from all ColdFusion templates and will replace the port number with the relative server name.

Requirement 7.7 WASS Guest Checkbox

Requirement 7.7 is an infrastructure modification. WASS has communicated to the FASS-PH development team that the Guest checkbox will be removed form the FASS-PH login interface. The FASS-PH development team will have to modify how this subsystem will identify a guest user. The system will search to find any Role ID's is associated with the User ID. If any Role ID's is associated with the User ID, the user will be redirected to the Main Internal page. If no Role ID is associated with the User ID, the user will be redirected to the Main Guest Page.

Input Data

Requirement 7.1 Storing PHAs' Assessment Attachments

Requirement 7.1 is an infrastructure modification. All attachments will now be stored in the REAC database as a Binary Large Object, (BLOB) data type. Prior to release 8.1.0.0 DCG will move all attachments to the REAC database.

Requirement 7.9 Removing the Identity Functionality from the Assessment Table

Requirement 7.9 is an infrastructure modification. The identity attribute of the column definition in a database is used by the database application to find the next sequential primary key. The identity attribute of the column definition will be disabled for the assessment_id field in the participate_assessment table. To compensate for the lack of the identity functionality, the maximum assessment_id is identified and will be incremented by one.

Input Data Collection Form (DCF)

Requirement 2: DCF Financial Statement Line Item G3000-010

Text changes are needed to adhere to accounting principles. Accountants should only be entering opinion of funds within the PHA and not entering opinion of a program. The text changes will occur in the External DCF Federal Program interface and in the Line Item G3000-010 Detail interface.

The text will change in only one place on the External DCF Federal Program interface. In the description column on the Line Item G3000-010 row, the text will change from “Type of Audit Report” to “Fund Opinion(s)”.

For the Line Item G3000-010 Detail interface, the text will change for every Federal Program name. For each Federal Program name that occurs on this interface, the wording “Fund Type and Opinion of the Fund containing” will be placed in front of the Federal Program name.

Requirement 4: DCF Financial Statement Line Item G4200-050

Requirement 4 will introduce a new logic between to Line Item: G4200-050 and G4200-010. If the external user selects a "No" value for Line Item G4200-010, Line Item G4200-050 will default to "Not Applicable" value and a pop-up window will inform the user of the logic between these two Line Items.

Requirement 5: DCF Financial Statement Line Item G1102

New logic will be in place, so that the external user will not be able to enter any amount on Line Item G1102. This new methodology should begin for all 9/30/2005 submissions.

Display Financial Information for HUD User

Requirement 3 Viewing Prior Fiscal Years' Submission Comments Interface

The "View Prior Fiscal Years Comment" interface is a new functionality to the FASS-PH. This interface will allow only the internal user, which consists of the Financial Analyst, Assessment Managers, and the Director to view prior fiscal years' comments.

This interface will be linked to the Internal Comment interface for each submissions. Once the internal user uses the link, the browsers will redirect the internal user to the "View Prior Fiscal Years Comment" interface. This interface will be divided into two sections: an interactive section and an output section

The interactive section of this interface will provide the user with the ability to view different outputs by changing the search criteria. The search criteria are Fiscal Year and Submission Type. The Fiscal Year search criterion will have the date range of all submissions' fiscal years currently in the FASS-PH. The Submission Type search criterion will consists of only two options of Audited and Unaudited. By default, the search criteria values will be the current fiscal year of the selected submission and both Audited and Unaudited submissions. Also the user will have the ability to redirect the browser to the original Reviewer Comment interface by pressing a link.

The output section of this interface will allow the user to view all of the comments and their attributes for the initial search criteria default values or the user's selection of the search criteria. The output will consists of the comment(s), the comment's entry date(s), and type of recommendation(s).

Display Financial Information for an External User

Requirement 6.2 FASS-PH Analyst Column

Requirement 6.2 is a maintenance requirement and will introduce a new logic regarding how to display the FASS-PH employee in the FASS-PH Analyst column. Only the financial analyst or manager that last view the submission will be display in this column. The director's name must not appear in this column.

Generate FDS Report (Current Year – Prior Year)

Requirement 6.4 Financial Data Sheet (FDS) Report

Requirement 6.4 is a maintenance requirement. This requirement will place page breaks on the FDS report, in order for the report to print properly.

Maintain LOCCS/HUDCAPS Data

Requirement 7.10 LOCCS/HUDCAPS Data Input Procedure

Requirement 7.10 is an infrastructure modification. According to DCG requirements any application must not create any permanent tables within any HUD related databases. A new procedure will be created to insert LOCCS/HUDCAPS data into the REAC database. The sub-routine of creating temporary tables weather it be database define permanent or temp tables to house the data before inserting into the REAC database will be eliminated. The data will insert directly into the database.

5.3 Flexibility

One more aspect of flexibility is found in the new capability of viewing prior fiscal years' submission comments. The user will only will have to operate one interface to view prior fiscal years' submission comments instead of going back to the Inbox interface, selecting another submissions' fiscal year, and viewing the Comment interface.

6.0 ENVIRONMENT

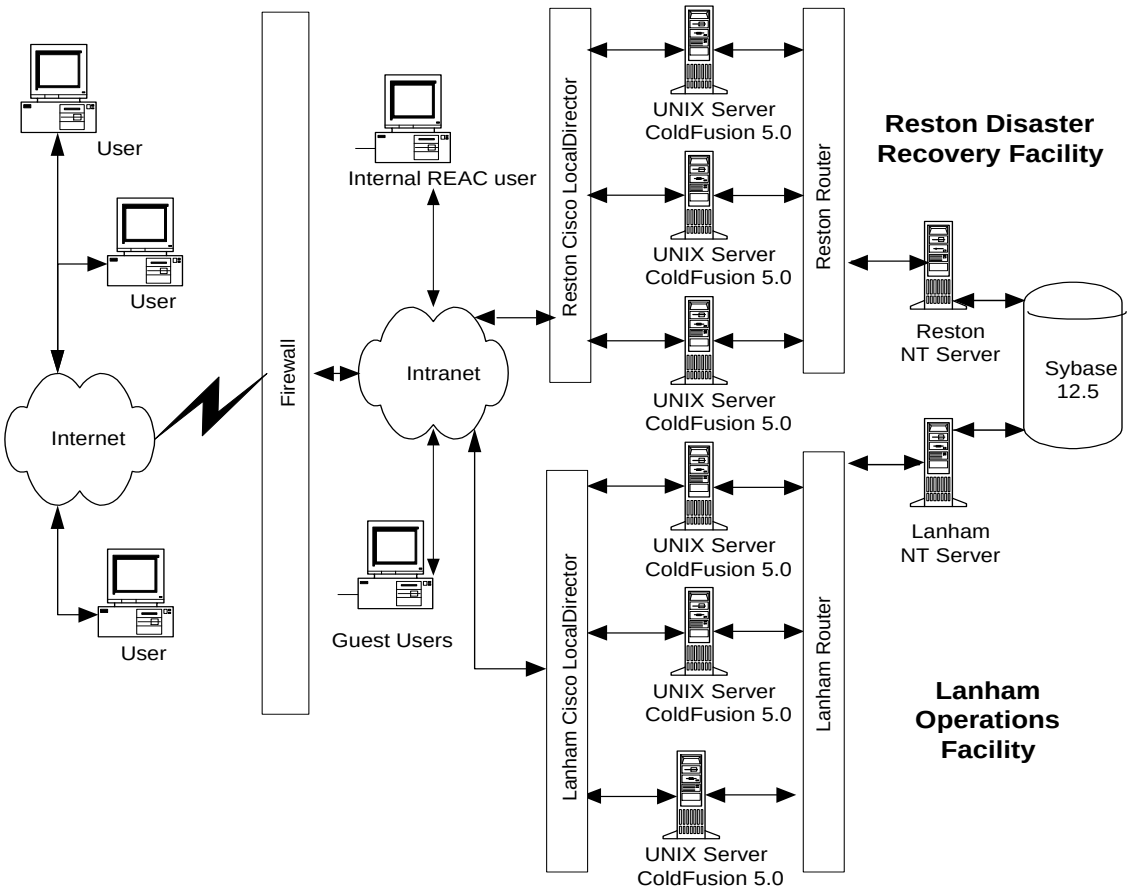
6.0 ENVIRONMENT

The following sections outline the Application Environment for FASS-PH Release 8.1.0.0 including equipment, software, communications, interfaces, summary of impacts, failure contingencies and assumptions and constraints.

6.1 Equipment Environment

Refer to the diagram in Section 2.3.1 (Equipment Being Used) for a layout of the current PIH-REAC hardware configuration at HUD. It briefly explains the system architecture in which PHA users will submit their financial submissions. These submissions are submitted over the Internet, where they go through a firewall before reaching REAC's Cold Fusion servers. Once reaching these servers, submissions are again sent through another firewall and processed on a UNIX server. After that, they are submitted to the database for storage.

The following diagram describes the Lanham Operations Facility and the Reston Disaster Recovery Facility.



6.2 Software Environment

The FASS-PH-PH Internet application will use Netscape Enterprise 3.6.2 web server software and ColdFusion 5.0 version web application software. The Internet application operating system software will be Unix System V Release 4.0. The FASS-PH intranet application will use Netscape Enterprise 3.6.2 web server software and ColdFusion 5.0 version web application software. The intranet application operating system software will be Windows NT 4.0. The FASS-PH Database software will be Sybase version 12.5 running on a Windows NT 4.0 operating system. FASS-PH Clients will access FASS-PH through personal computers running the Windows 95 or higher operating system. For HUD users, the computers will have HUDWARE II software installed including: Internet Explorer 6.0, Microsoft Office 2000, and Adobe Acrobat Reader 5.0 and Internet connection software.

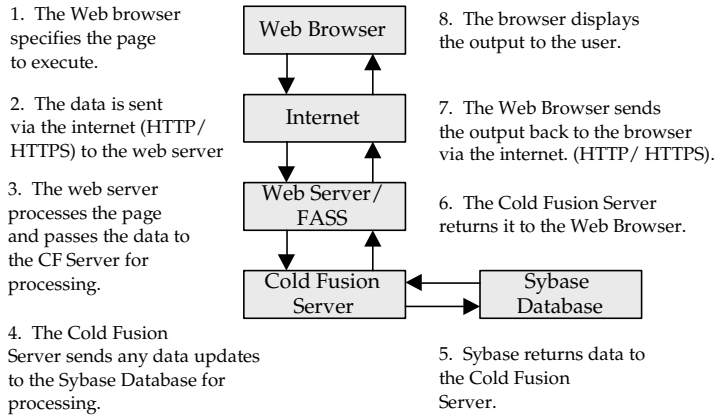
6.3 Communications Requirements

The FASS-PH application is web-based and requires external HUD users to be able to access the Internet via TCP/IP and FASS-PH via a Web Browser and HTTPS. Internal HUD users must be connected to the LAN and must be able to access FASS-PH via a Web Browser and HTTP.

6.3.1 Communications Overview

The following diagram illustrates the communications required for the FASS Application:

Communications Overview Diagram



6.3.2 Communications Hardware

FASS-PH external users will need a PC with modem and the ability to access the World Wide Web (WWW) through an Internet Service Provider (ISP) or other related means.

6.3.3 Communications Software

The FASS-PH Application will be developed in Cold Fusion, a tag based web-application software language, that generates dynamic data-driven HTML pages for the user based on HTTP / HTTPS requests. The software communicates to a Sybase Database via internal Sybase Native Drivers that process SQL statements coming from the Cold Fusion Server.

6.4 Interfaces

FASS-PH integrates with several other REAC subsystems. This integration will allow FASS-PH to provide information more readily to the user from different interface points, easing the user experience. This integration also allows data entry to act more fluid. An environment where related data can be entered from one location is easier to use than an environment where a complete lack of interaction causes a more difficult interaction with the system. Please refer to Section 2.3.3 (Interfaces) for more information.

6.5 Summary of Impacts

The following section will discuss the organizational, operational and developmental impacts of the FASS-PH system on the information systems organization.

6.5.1 IS Organizational Impacts

There will be no changes to the IS organizational structure as a result of the modifications.

6.5.2 IS Operational Impacts

There will be no additional impacts on the IS operations of the REAC as a result of the modifications.

6.5.3 IS Developmental Impacts

The following issues could adversely affect the development of the FASS PH system:

1. User requirements are not fully defined by the delivery of the Define and Design Phase documents.
2. Failing to have the development environment ready for development.
3. Failing to have the test environment ready for testing.
4. Failing to capture all necessary business rules.

6.6 Failure Contingencies

The following section will discuss the failure contingency plans for the FASS-PH environment.

6.6.1 Restart/Recovery

HUD IT controls the restart/recovery procedures for REAC systems. The production web file baseline is located on a separate server under PVCS version control. Also, daily backups of the production database are kept on a separate tape drive. HUD IT will be able to restart/recover any lost code or data if a failure occurs.

6.6.2 Other Contingencies

Backup

HUD performs nightly incremental and weekly full back-ups of their servers and databases. All backups are performed using a tape medium. Additionally, the COOP architecture provides a real-time backup database, in the event of database failure. Refer to the contingencies listed in the above table. Please refer to the HUD Business Resumption Plan.

All production web files are kept under PVCS version control on a separate server and will be restored if files are lost.

A “Sorry” page will be displayed to indicate the system is experiencing a temporary problem

Fallback

In the event that FASS-PH is unable to perform the necessary functionality, the REAC FASS-PH team may need to perform the necessary analysis manually.

Degraded Modes of Operation

FASS-PH must be restored completely in the event that full processing capability is not available.

Upon the failure of a server, users will be directed to another server in the clustered environment

6.7 Assumptions and Constraints

Assumptions

FASS-PH is an online system. The following assumptions can be made about FASS-PH:

1. Funding - Adequate funding will be provided for planning, documenting requirements and design, developing, and testing all modifications being incorporated into FASS Release 8.1.0.0
2. User has access to a HUD approved version of Internet Explorer version 6.0, or Netscape Navigator (web browser) version 4.79.
3. FASS-PH will be available 24 hours a day, seven days a week. This does not include scheduled downtime for server maintenance or application upgrades.
4. If applicable, user has compatible application to handle the XML interface.

5. Users have Adobe Acrobat Reader version 4.05 or higher installed on their computers.
6. System Interaction - FASS interfaces with NASS and WASS will be maintained. Coordination between the business users, requirements, design team and development team of these systems will be also be maintained.

Constraints

The following items could serve as potential constraints in the operation of the system:

1. Lack of memory on REAC servers.
2. Slow processing time on REAC servers.
3. Lack of storage space for submissions.
4. Loss of electrical power.
5. Loss of Internet service.
6. Natural disaster.

7.0 SECURITY

7.0 SECURITY

7.1 Background Information

FASS-PH provides a variety of functions for its users. The PHA and Section 8 Entity users will have the ability to enter, validate, and submit financial information to REAC. The IPA Reviewer will review the audited financial information in read-only mode and verify the audited data reported by the PHA or Section 8 Entity. The authorized REAC users will be allowed to review submissions, restore penalty points, and accept or reject the submission.

For audit tracking, FASS PH will track an action code, user ID, and date/time stamp for all actions that either causes the submission status to change or cause the submission to be assigned to another FASS-PH user.

The REAC System Administrator will have the authority to assign user IDs to HUD users (including REAC users) who require access over simply viewing management data. HUD users will have the ability to choose their passwords. The FASS-PH team has developed appropriate security profiles to enable REAC to perform its mission in an auditable manner. Although role codes are defined by FASS-PH, the WASS team will be responsible for the security application for FASS PH Release 8.1.0.0.

7.2 Control Points, Vulnerabilities, and Safeguards

7.2.1 Control Points

7.2.1.1 Input Control Points

- Origin: This is a function the data sources will perform and is outside the scope of FASS-PH.
- Data Entry: The following user groups are permitted to perform data entry, update and corrective actions:
  1. PHAs/Agents – Financial Data Submissions
  2. REAC – Financial Data Review plus appropriate acceptance and maintenance access
  3. HUD – Financial Data Review Access
- Disposition: The source data will be stored in the system until such time as three (3) years has expired or the data is deemed no longer current. When either of these cases occurs, the source data will be stored on a long-term storage medium by the DCG and HUD IT. For further information concerning source data disposition, please reference the HUD Handbook Directive 2229.1, "Records Disposition Scheduling for Automated Systems."

Defined security profiles will enable REAC to accomplish the mission of FASS-PH in an auditable and secure manner. There will be External Coordinators and a REAC System Administrator. The External Coordinators are entered into Secure Connection as a coordinator and are authorized to assign FASS-PH roles to user IDs for a specific PHA or Section 8 Entity. The REAC System Administrator is also entered into Secure Connection and is authorized to assign FASS-PH roles to internal user IDs.

Role Code	Role	Definition
MRA	FASS Program Director	This role is for the REAC FASS Program Director.
FID	FASS-PH Finance Director	This role is for the FASS-PH Finance Director.
AM	FASS-PH Assessment Manager	This role is for the FASS-PH Assessment Manager(s).
RFA	FASS-PH Analyst	This role is for the FASS-PH Financial Analyst(s).
CPV	IPA Verifier	This role is for the CPA/IPA who will verify the audited submissions of a PHA or Section 8 Entity.
PID	PHA Director	This role is for the PHA and Section 8 Entity Executive Director.
FIA	PHA Analyst	This role is for the PHA and Section 8 Entity Analyst(s).
SMT	PHA Submitter	This role is for PHA and Section 8 Entity users who will be submitting data to REAC.
GUS	Guest	This role is for other HUD users. The GUS role will never be assigned to a REAC FASS-PH user ID.

Due to the varied functionality of the system, it is necessary to control user access to the system based upon defined user roles and assigned actions. One or more actions are assigned to one or many roles. No new action codes have been identified for FASS-PH Release 8.1.0.0. Further, no changes to the current action code/role code assignments will be implemented with Release 8.1.0.0.

Roles will be assigned to a user's ID by the designated coordinator. The program specifications will detail object-level security for each screen. Some of the action codes are based on factors such as PHA assignment to a REAC Analyst, PHA risk categorization, and whether there are score adjustments, late penalties or submission rejections.

7.2.1.2 Process Control Points

Accuracy and Completeness: The following table describes the points in the processing where the system should determine and notify the user whether the input data was acceptable and whether the requested processing was completed.

Notification	Notification Medium
Login	The browser displays the secure connection page.
FASS-PH Template Download	The browser refreshes with pertinent options displayed.
FASS-PH Template and Submission Download	The browser refreshes with pertinent options displayed.
Saving FASS-PH Submission information	The browser refreshes with the input data from the database displayed. If the save fails, an error is displayed in the browser.
Validation of FDS	The browser displays a successful validation page. Otherwise, an error page displays listing violated business rules.
Validation of submission	The browser displays the following message: "Your submission completeness check is complete. Please use your Browser Back button to return to the previous screen." Otherwise, an error page displays listing violated business rules. For edit flags the browser displays the following message: "No edit flags were generated against this Program" Otherwise, an error page displays generated edit flags against the submission.

Notification	Notification Medium
Upload of files	A message box appears stating "File Transfer complete."
Submission of information to REAC	The browser displays the message "Congratulations – your submission has been successfully transmitted to REAC." Otherwise, the browser displays an error message. For edit flags, the browser displays the message: "No additional edit flags were generated for this submission." Otherwise, the browser displays an error message displaying additional edit flags generated against the submission.
Submission of information to IPA reviewer	The browser displays the message "Please make sure your Independent Public Accountant completes the second step of the audited submission process. If you have any questions regarding this process, please contact your REAC analyst." Otherwise, the browser displays an error message.
Submission of information from IPA reviewer	If the IPA reviewer accepts the submission, the browser displays the message: "Please make sure to remind your PHA to submit this completed submission to REAC. If you have any questions regarding this process, please contact your REAC analyst." If the IPA review rejects the submission, the browser displays the message: "Please make sure to remind your PHA to resubmit a corrected submission to the IPA. If you have any questions regarding this process, please contact your REAC analyst."

7.2.1.3 Output Control Points

- **Production**: The following user groups are permitted to request and/or receive output from FASS-PH:
  1. PHA Coordinator
  2. Employees of PHAs
  3. PIH-REAC Users
  4. HUD Users

- **Distribution**: No new output products are anticipated for FASS-PH Release 8.1.0.0:

7.2.2 Vulnerabilities

REAC is susceptible to misrepresentation of information by individuals not authorized to submit data from the external users. To address this, Executive Directors will be mailed coordinator IDs to distribute appropriately. All external users will then apply for an ID, which will be sent to the coordinators. The coordinator will have rights to grant appropriate system access to the user of that entity.

7.2.3 Safeguards

7.2.3.1 Administrative Safeguards

- Personnel: The REAC security administrator will require access to create, update and delete user IDs and access levels.
- Collection and Preparation: HUD performs nightly back-ups of the REACS database. All back-ups are performed using a tape medium. Based on previous data failure issues, a mirror backup with real-time accuracy is suggested.
- Constrained User Environment: FASS-PH is designed to be an online transaction system and will be available 24 hours a day, seven days a week, except for downtime during scheduled system maintenance and upgrades.
- Distribution: FASS-PH has the ability to allow Guest Users to access the system. These guest users will have the ability to view information only. Creation, modification, and deletion of information will be restricted to registered users only, granted by HUD Executive Directors.
- Access/Permission: the REAC security administrator will define User access and permissions to FASS-PH.

7.2.3.2 Physical Safeguards

- Dedicated Equipment: The REAC servers are located at the Lockheed Martin computer facility located in Lanham, Maryland and at the Disaster Recovery Center is Reston, Virginia.
- Storage and Protection: Server and database backups are stored in the tape library that is currently located in the fourth floor computer room at HUD headquarters. Other materials such as this Functional Requirements Document will be kept electronically both on the project LAN and in a Lotus Notes database. Each location provides adequate backup mechanisms, preventingloss in case of system failures.

7.2.3.3 Technical Safeguards

- User Access: The following lists requirements for managing user access:
  1. PHA Employees and Agents – External entities will manage their users by ‘delegating’ access to submit information to REAC. If a user has not been delegated this authority by an entity, they will not be able to submit or view any FASS PH information.
  2. REAC – REAC users will be provided access to update FASS-PH information as appropriate.
  3. HUD – HUD users will be provided access to FASS-PH information as appropriate. Process Safeguards: Identify the need for any unique data validation procedures or data encryption that may provide added integrity.

- Process Safeguards: Even though the financial information FASS PH collected is in the public domain, we will encrypt the transmissions en route to verify they are not intercepted. HUD's Internet Connection is a secure Internet server.
- Security Identification Requirements: Only authorized users will be able to submit information to the FASS-PH. REAC will have the ability to determine exactly who submitted information for which external entity. As a double check, REAC plans to have Secure Connections verify the entity's fiscal year end and EIN when a user applies for an ID. If this information does not match HUD's values, the submitter will not be provided with an ID and will need to call HUD to resolve the problem via the data's source system.

7.3 System Monitoring and Auditing

7.3.1 Journalizing

7.3.1.1 Triggering Criteria

None is applicable for release 8.1.0.0

7.3.1.2 Identification Information

The following table is a list of data that is stored when the system saves a journal entry to the database. These journal entries are stored at certain times during the life of a submission, and describe the state the submission is currently in. This information is stored in the participant_assess_action table of the database.

Column Name	Description
action_code	Description of the event being stored.
action_date	The date and time the event occurred.
user_id	The user name that store the event.

7.3.1.3 Application Data

The system records data on several events that is stored in the participant_assess_action table of the REACS database. These submission events include the following:

- Creation or downloading
- Transmission to REAC
- Transmission to IPA Reviewer
- Transmission to PHA following IPA Review
- Rejection
- Approval from REAC
- Scoring
- Unapproved from REAC
- Late Presumptive Failure
- Automatic Acceptance

7.3.1.4 Journal Use

There are no procedural or managerial requirements for journal use at this time. Upon request, FASS-PH developers may query the Data Warehouse database for information on specific submissions.

7.3.2 Audit Trail

For audit tracking, FASS PH will track an action code, user ID, and date/time stamp for all actions that either causes the submission status to change or cause the submission to be assigned to another FASS-PH user.

7.3.2.1 Transactions Back to Original Source Documents

There are no transactions back to original source documents for FASS-PH Release 8.1.0.0.

7.3.2.2 Transactions Forward to Summary Totals

There are no transactions forward to summary totals for FASS-PH Release 8.1.0.0.

7.3.2.3 Summary Totals Back to Component Transactions

There are no summary totals back to component transactions for FASS-PH Release 8.1.0.0.

7.3.2.4 All Record Disposition Schedules

The source data will be stored in the system until at least three (3) years has expired or the data is deemed no longer current. When either of these cases occurs, the source data will be stored on a long-term storage medium by the DCG and HUD IT. For further information concerning source data disposition, please reference the HUD Handbook Directive 2229.1, "Records Disposition Scheduling for Automated Systems."

APPENDIX A- BUSINESS RULES

APPENDIX A: BUSINESS RULES

Please reference Appendix A of the FASS-PH user's Manual for a list of defined FASS-PH business rules.